REMARKS

Claim Rejections

Claim 4 is rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. Claim 4 is rejected under 35 U.S.C. §112, first paragraph. Claims 1-5 are rejected under 35 U.S.C. §102(a) and (e) as being anticipated by Berenbaum et al. (6,658,551) .

It is noted that the reference to Berenbaum et al. was initially cited by the Examiner in the outstanding Final Office Action. Thus, this Amendment represents Applicant's initial opportunity to respond to the rejections based upon this reference.

Claim Objections

Claim 4 is objected to as containing typographical errors. In response to the Examiner's objection thereto, Applicant has amended Claim 4, as suggested by the Examiner.

Claim Amendments

By this Amendment, Applicant has amended claims 1 and 4 of this application to address the Examiner's objections and rejections, as well as to better protect what Applicant regards as the invention. It is believed that the amended claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art.

The amended claims are directed toward: a method for inter-cluster communication that employs register permutation, where clustered functional units have some global registers, and the said clustered functional units exchange data ***without actual data movement by exchanging data between the said global registers of each cluster.***

Applicant teaches a method of data communication between multiple independent functional unit groups (said "clusters") where data cannot be exchanged directly (i.e. data cannot be transferred directly between two clusters through a register file). Applicant also teaches that a cluster possesses a local (private) register file and a global (public) register file, respectively, and the clusters

exchange data ***by exchanging data between*** (or "permuting") the said global register files ***without actual data movements***.

In comparison, Berenbaum et al. discloses a multithreaded VLIW processor with splittable instruction packets, *i.e.* the VLIW instructions can be split and combined to improve the utilization of functional units. Fig. 8 of Berenbaum et al. shows an abstract architecture for K-operation VLIW instructions, M functional units, and N threads (*i.e.*, with N independent register files). Multiple independent threads (up to N) with VLIW instructions (each contains up to K operations) can run concurrently on the M functional units. Therefore, two crossbar switches are included to forward input operands and output results of each active thread between the functional units and the register file dedicated to that thread. It is important to note that the N register files are independent, each of which is associated with an independent thread. As a result, data will not be exchanged between the register files. In other words, there is ***no global register file*** and thus ***no partitioned register files*** as disclosed in the present application.

Berenbaum et al. do not teach: a method for inter-cluster communication that employs register permutation, where clustered functional units have some global registers, and the said clustered functional units exchange data without actual data movement by exchanging data between the said global registers of each cluster.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Berenbaum et al. do not disclose each and every feature of Applicant's amended claims and, therefore, could not possibly anticipate these claims under 35 U.S.C. § 102. Absent a specific showing of these features, Berenbaum et al. cannot be said to anticipate any of Applicant's amended claims under 35 U.S.C. § 102.

It is further submitted that Berenbaum et al. do not disclose, or suggest any modification of the specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Thus, it is not believed that Balmer et al. renders obvious any of Applicant's amended claims under 35 U.S.C. § 103.

Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested.

Should the Examiner not be of the opinion that this case is in condition for allowance, it is requested that this amendment be entered for the purposes of appeal, since it materially reduces the issues on appeal by obviating the outstanding objections to and rejection of claim 4 under 35 U.S.C. § 112, first paragraph. It is not believed that the foregoing amendments require any further searching and/or consideration on the part of the Examiner, since such amendment merely clarifies what the skilled artisan would understand "permuting" to mean in the context of inter-cluster communication, *i.e.* exchanging data.

Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

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